

<b>Notice of Allowability</b>	Application No.	Applicant(s)
	10/784,553	MATSUMOTO, YUKIHIRO
	Examiner	Art Unit
	Virginia Manoharan	1764

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to amendment of 09/20/05.
2.  The allowed claim(s) is/are 1-7.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

## REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Because the acrylic acid family is an easily polymerizable substance, there is a problem that its polymer is formed in a purification apparatus to thus adhere to an inner wall surface of the apparatus or clog up the piping (see page 2, lines 5-8). The problem addressed then by the instant method or process is to prevent the formation and adhesion of the polymer in the distillation column by preventing the channeling of liquid or vapor in the distillation column.

This problem is solved according to the invention by a process including the step of supplying the liquid from the distillation column to at least two reboilers installed parallel to the column, and returning the heat-boiled vapor from the reboilers to the distillation column, wherein the outer diameter of the column is in a range of 2 to 6 m, the height in a range of 2 to 40 m, and the capacity in a range of 0.5 to 1000 m<sup>3</sup>.

Yoneda et al (6,596,129), Skraba et al (3,803,002) and/or Liebert (4,189,616) are the applied, closest prior art.

However, while Yoneda recognizes the problem addressed by the present invention, Yoneda solves the problem differently, i.e., by installing two condensers in series. The instant invention, interalia, provides two reboilers in parallel.

Skraba et al. and Liebert are directed to distillation of nonpolymerizable substances, not to the distillation of the easily polymerizable acrylic acid family of the instant invention. Since the hydrocarbon of Skraba et al. reference, and the isoparaffin of

Liebert are non-polymerizable, unlike the polymerizable compounds of the present invention, they do not therefore, recognize the problem inherent in the purification of the acrylic acid family encompassing acrylic acid and its esters.

Thus, the subject matter of claims 1-7 is neither taught nor shown by the references of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia Manoharan whose telephone number is 571-272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola, can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
VIRGINIA MANOHARAN  
EXAMINER  
Art 1764

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Atty. Robert Jacobson, representative to applicant on November 4, 2005.

**IN THE CLAIMS:**

Claim 1, page 2, fifth line from the bottom, between "supplying" and "liquid" -----the----- has been inserted.

Claim 1 , page 2, twelfth line from the bottom, ""100 m<sup>3</sup>" has been changed to --- -1, 000 m<sup>3</sup> ---.

Claims 1-7 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia Manoharan whose telephone number is 571-272-1450.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola, can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
EXAMINER  
UNIT 1764  
11/8/2015